



## *Mr. Joel M. Hubbell*

*Instrumental in developing subsurface probe and measuring equipment*

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**Education:** Mr. Joel M. Hubbell received his B.S. in geology from Idaho State University in 1976, and his M.S. in hydrology from the University of Idaho in 1981.

**Work experience:** Mr. Hubbell is an advisory scientist at the Idaho National Laboratory, where he has worked since 1985. Prior to joining the INL, he was a water resource specialist for the New Mexico Environmental Improvement Division for three years.

**Professional endeavors:** Mr. Hubbell has 20 years' experience in

leading and conducting investigations of subsurface flow of hazardous and radioactive wastes from the land surface through the vadose zone and into groundwater. He has submitted over 60 invention disclosures in the past 10 years. He is a professional geologist and member of the Association of Ground Water Scientists and Engineers, the American Society of Testing Engineers and the American Geophysical Union. In March 2003, Mr. Hubbell received a Lifetime Award in Inventorship from the INL, recognizing his many patents in the area of groundwater research, monitoring and sampling. "I have really enjoyed the collaboration with the top-notch scientists at this laboratory," Mr. Hubbell says. "They are superb problem solvers that are willing to give of their time and expertise to address real scientific questions. The INL brings together a unique mix of individuals that allows support for new ideas from conception to commercialization. I am most proud of work we have been able to accomplish on developing tools for improving our understanding of moisture movement in the vadose zone. It has been exciting to obtain information on water movement in the deep vadose zones using the advanced and portable tensiometers. This is an exciting time for doing science and technology development."

### **Patents:**

U.S. Patent No. 5,520,248 – Method and Apparatus for Determining the Hydraulic Conductivity of Earthen Material

U.S. Patent No. 5,481,927 – Vapor Port and Groundwater Sampling Well

U.S. Patent No. 5,644,947 -- Tensiometer and Method of Determining Soil Moisture Potential in Belowgrade Earthen Soil

U.S. Patent No. 5,758,538 – Tensiometer and Method of Determining Soil Moisture Potential in Belowgrade Earthen Soil

U.S. Patent No. 5,9154,76 -- Monitoring Well

U.S. Patent No. 5,969,242 – Isobaric Groundwater Well

U.S. Patent No. 6,263,726 – Sidewall Tensiometer and Method of Determining Soil Moisture in Belowgrade Earthen Soil

U.S. Patent No. 6,289,725 – Field Matric Potential Sensor

U.S. Patent No. 6,308,563 – Vadose Zone Isobaric Well

U.S. Patent No. 6,405,588 -- Monitoring Well

U.S. Patent No. 6,539,780 -- Self-compensating Tensiometer and Method

U.S. Patent No. 6,609,434 -- A Method of Retrieving a Liquid Sample, a Suction Lysimeter, a Portable Suction Lysimeter, a Lysimeter System and a Deep Lysimeter

### **Licensing information**

For information on licensing INL technologies such as those developed by Mr. Hubbell, contact the Lead Account Executive for Environmental:

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